

# Do your fluids contain chlorine?

## METALWORKING FLUIDS

Just as metalworking fluids aren't all the same, *waste* fluids also differ from each other. In Washington State, some spent fluids can be burned as used oil; others cannot. Some must be managed as hazardous waste. For others, this isn't necessary. The same is true for those materials that come in contact with fluids – floor sweepings, swarf, mixed chips, and absorbents.

*Do you know if your wastes are going to the right place?* In order to answer this question, you need to know if your fluids – and the materials they contact – contain compounds with chlorine.

### Chlorinated compounds: Implications for disposal

Fluids formulated with compounds containing chlorine, such as *chlorinated paraffins* or *chlorinated alkene polymers*, cannot be burned or sent to an oil processor that produces fuel for burning. Thus, spent metalworking fluids that contain chlorinated compounds cannot be recycled as used oil if the used oil processor produces fuel from the fluid. This is typically the case locally.

Why not? Burning chlorine compounds creates new, highly toxic chemicals such as *chlorinated dibenzo-dioxins* and *chlorinated dibenzo-furans*. These toxic chemicals are persistent in the environment, often moving long distances.

In some cases, metalworking fluids that aren't formulated with chlorinated compounds become chlorinated later due to additives and other materials that contain *halogenated organic compounds*. (Halogenated organic compounds are compounds of carbon and chlorine that resist biodegradation and persist in the environment). Additives and other materials that could contribute chlorinated compounds to the sump include tapping fluids, biocides, lubricating oils (infrequently), machined plastics, paint, and cleaning or degreasing products used in machine maintenance. *continued →*

## WHAT ABOUT SORBENTS, MIXED CHIPS AND SWARF?

Mixed chips, sorbents, floor sweepings, and swarf that come in contact with chlorinated fluids must – like the fluids – be managed as hazardous waste. The exception is segregated metal chips. If segregated by metal type, chips that are contaminated with chlorinated fluid may be given to a metal recycler. If not segregated, contaminated chips must be managed as hazardous waste.

### If chlorinated compounds **ARE** present in the sump fluids:

- *Don't* put chips, sorbents, floor sweepings, etc. in the garbage;
- Give segregated chips to a metal recycler;
- If not recycled, manage the wastes as hazardous wastes and count the amount of waste generated each month when determining your generator status for the Department of Ecology.
- Consider switching to non-chlorinated products (although other business considerations –

performance, tool life and cost – may make chlorinated fluids the best choice despite higher disposal costs).

### If chlorinated compounds are **NOT** present in the sump fluids:

- The sorbents, mixed chips, or swarf may not be hazardous. Contact the Waste Characterization Program in King County at 206-296-4633 for a clearance to dispose of them in the garbage. (Additional testing may be necessary to determine whether they are hazardous.)

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**This information is available on request in accessible formats for persons with disabilities by calling (206) 263-3050.**

# services

## KING COUNTY OFFERS SERVICES FOR MACHINE SHOPS

### ① Fluid Testing

- Fluid samples tested by King County – no cost
- Cash reimbursement for testing done by your shop
- Referrals to testing labs
- Interpretation of test results by King County – no cost

### ② Consultation regarding regulations on fluid management

### ③ Consultation to extend fluid life or reclaim fluids on-site

For more information about any of these services, call the Business Waste Line at (206) 296-3976. Or visit us on the Web at [www.metrokc.gov/hazwaste/machineshop/](http://www.metrokc.gov/hazwaste/machineshop/).

# Are your wastes going

In Washington State, waste fluids that contain higher concentrations of halogenated organic compounds – whether these are part of the original formulation or from additives or other materials – cannot be burned as used oil. Often these fluids must be handled as hazardous waste. *(See page 3 for more information on disposal.)*

## HOW TO FIND OUT IF WASTE FLUID IS 'CHLORINATED'

In 1998 King County tested waste fluids from 14 shops and found that *all* samples contained chlorine – even though a number of these shops believed that their fluids were chlorine-free. Chlorinated compounds are prevalent in machine shops, and waste fluids and the materials they contact are apt to be chlorinated too.

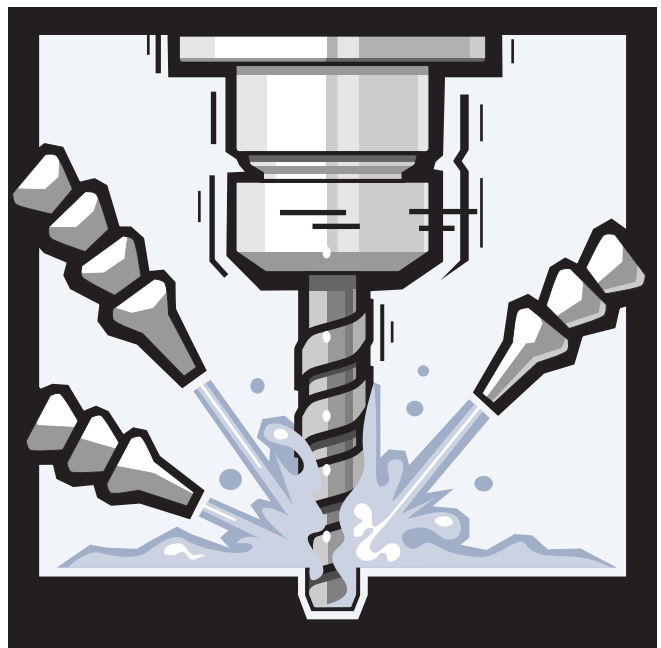
**Check the MSDS:** The easiest way to determine whether a metalworking fluid is chlorinated is to check the material safety data sheet (MSDS) for the product. Look for “chlorinated paraffins,” “chlorinated alkene polymers,” or any chemical with the syllable “chlor-” (for example, *polychlorinated* alkane) on the list of ingredients. If you find this, you know the product contains chlorinated compounds.

**Ask the supplier:** Most manufacturers don't list all ingredients on the MSDS. In that case, or if you don't find chlorinated compounds on the MSDS, ask the manufacturer or supplier if the product is chlorine-free.

If the manufacturer and/or supplier indicate that there are chlorinated compounds in the formulation, no further investigation is needed. You can assume that your waste fluid is also chlorinated.

**Remember additives and other materials:** If the product MSDS and the supplier don't indicate chlorine in the fluid, there are still possibilities for halogenated organic compounds (which contain chlorine) in the waste. Biocides, tapping fluids, cleaners and degreasers can also contribute chlorinated compounds. If you have MSDSs for these items, check them. Also consider whether machined plastics, lubricating oils, paint or other materials could be contributing chlorine to your sump.

**Test waste fluid:** Testing waste fluid is the safest way to confirm whether or not chlorinated compounds are present, from any source. Testing should be done by a certified lab; the cost is about \$70. King County can help reimburse costs of testing and provide some testing services. Call 206-296-3976 for more information.



# g to the right place?

## M A N A G I N G   W A S T E   F L U I D S

### If chlorinated compounds **ARE** present in the fluid...

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- *Don't* send waste fluid to a used oil processor that produces fuel for burning;
- Consider switching to non-chlorinated products (although other business considerations – performance, tool life and cost – may make chlorinated fluids the best choice despite higher disposal costs);
- Consider on-site equipment to reclaim metalworking fluids for reuse in your shop;
- Consider ultrafiltration or evaporation to reduce the volume of waste;
- Manage wastes as hazardous wastes and count the amount of waste generated each month when determining your generator status for the Department of Ecology.

#### **Reclaim for reuse as a metalworking fluid:**

Seaport Petroleum.....206-971-7999

#### **Hazardous waste:**

Emerald Petroleum .....888-832-3008  
ENSCO .....360-527-2222  
Envirotech Systems.....800-922-9395  
FBN Enterprises Inc.....425-820-8115  
Foss Environmental Services .....206-767-0441  
Keep It Clean Recycling & Equipment ...425-868-3535  
Kleen Environmental Technologies .....206-285-8010  
Onyx Environmental Services .....800-334-2387  
Pacific Industrial Resources (PIR).....253-437-0785  
Philip Services .....800-228-7872  
Phoenix Environmental.....888-475-0116

Prime Environmental Services .....206-768-6162  
Protective Environmental Services.....206-624-5503  
Romic Environmental Technologies .....800-819-5912  
Safety-Kleen.....800-669-5948  
Spencer Environmental Services .....800-286-0896  
Van Waters & Rogers, Chem Care Div....253-872-5095

### If **NO** chlorinated compounds are present in the fluid...

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- Manage waste fluids by following the “used oil management standards” (which may include sending fluids to used oil processors that produce fuel for burning). Non-chlorinated fluids are *not* counted in the amount of waste generated each month when determining your generator status for the Department of Ecology.

#### **Reclaim for reuse as metalworking fluid:**

Seaport Petroleum .....206-971-7999

#### **Used oil – burn for energy recovery:**

Emerald Petroleum .....888-832-3008  
Envirotech Systems .....800-922-9395  
FBN Enterprises Inc. ....425-820-8115  
Foss Environmental Services .....206-767-0441  
Kleen Environmental Technologies.....206-285-8010  
Onyx Environmental Services .....800-334-2387  
Pacific Industrial Resources (PIR) .....253-437-0785  
Phoenix Environmental .....888-475-0116  
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